Pre-Calculus Syllabus

MAT 186   CRN 10393
Max Wentworth, Instructor
Room E204, Tuesday/Thursday 10:00-11:40AM
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Office Hours: Tuesday/Thursday 12:10-12:45, Room D205E

Course Description

Through lecture, discussion of material and practice, this course prepares students for the study of Calculus I. Questions during lecture can be very helpful and are encouraged.

Objectives

To prepares students for the study of Calculus I. The topics include: polynomial and rational functions and their graphs, operations on radical expressions, matrices, exponential and logarithmic functions, trigonometric functions and their graphs, trigonometric identities, trigonometric applications, and determinants.

Method of Evaluation

1) Class Participation
2) Take Home Assignments
3) Tests
4) Final Exam

Class Participation points will be awarded for group work as well as individual contributions.

Take Home Assignments will be due one week after they are assigned. Students are encouraged to work together on take home assignments, but each student is responsible for understanding the material. Late assignments will be accepted one class after they are due with 5 points taken off. A zero will assigned for any take home which is not handed in before or during the grace period.

Tests will be announced one week in advance. If you are going to be absent the day of a test, you must let me know, by email or phone before or on that day. Failure to do so will result in a zero for that test.

The **final** is comprehensive.

Academic Integrity

Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; and act at all times with honor.

CELL PHONES MUST BE TURNED OFF AND PUT AWAY DURING CLASS.

Grading

A 93-100		C- 70-72	
A- 90-92		D+ 67-69	
B+ 87-89		D 63-66	
B 83-86		D- 60-62	
B- 80-82		F below 60.	
C+ 77-79			
C 73-76			

Attendance

Attendance is extremely important. Regular attendance is expected. One class participation point will be awarded for each class you attend and more points may be gained during class.

Required Text

Precalculus, 2012, 6th edition, J. Stewart, L. Redin and S. Watson

Homework

You are expected to do the homework when it is assigned. Questions on homework will be covered at the beginning of each class.

Disabilities Statement

Students with disabilities should contact the Counseling Center.
Phone: (860) 383-5217
Location: Room A-119
Hours: Monday through Friday (excepting major holidays) 8:30am to 5:00pm.

Resources

Free tutoring is available at the Tutoring and Academic Success Center (TASC). Please use this service as needed.

College Withdrawal Policy

Students may withdraw, at the Registrar's Office, for any reason on or before May 7, 2012.

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MAT186 Course Outcomes

1. For each function, identify the domain, range, end behavior, local behavior and average rate of change over given intervals.
2. From an equation graph each function; and from a graph or data identify an equation
3. To any function, apply transformations involving vertical and horizontal shifting and stretching/shrinking.
4. Perform symbolic manipulations for algebraic representations of the various functions
   a) Factor polynomials
   b) Apply rules for radicals
   c) Evaluate expressions with rational exponents
   d) Apply rules for exponents and logarithms
   e) Apply trigonometric formulas and identities: Pythagorean, reciprocal, sum, difference, double and half angle formulas.
5. Given an independent variable, find the dependent variable (given and x find y): evaluate
6. Given a dependent variable, find all possible independent variables (given y find x):solve
7. Graph piecewise defined functions.
8. Use elementary functions to model data and solve practical problems.
9. Find the sum, difference, product and quotient of functions
10. Compose functions
11. De-compose functions
12. Tell if a function is invertible
13. Find the inverse of a function
14. Tell whether two functions are inverses by composition
15. Graph the inverse of a function using symmetry to y=x
16. Find the six trigonometric values of an acute angle, and the inverse trig values of a ratio of sides.
17. Solve triangles using right triangle trig, distinguish between the angle of depression and elevation.
18. Solve non –right triangles using the laws of sines and cosines
19. Solve applied problems using right triangle trigonometry
20. Add, subtract, multiply and divide complex numbers
21. Evaluate an integral power of i
22. Identify the conjugate of complex numbers
23. Find determinants of an nxn matrix
24. Solve a system using Cramer's rule
25. Solve a system using row reduced echelon form